

New Species in Asteraceae from the Subalps of Southeastern Australia.

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Abstract

Olearia stenophylla and *Euchiton poliochlorus* are described and illustrated. Their distributions, habitats, conservation status and relationships to closely related congeners are discussed. Both species are apparently endemic to subalpine areas of south-eastern Australia.

Introduction

In the course of curating Asteraceae at MEL and compiling accounts for the fourth volume of the *Flora of Victoria*, a number of undescribed taxa were encountered. One of these has long been recognized as an unnamed taxon in Australia, others appear to have been overlooked in herbaria and the field. The opportunity is here taken to provide names for two of these species, both endemic to subalpine areas of south-eastern Australia. Other taxa will be dealt with in subsequent papers.

Taxonomy

Olearia stenophylla N.G. Walsh, sp. nov.

Olearia asterotrichae (F. Muell.) F. Muell. ex Benth. affinis foliis longioribus linearis acutis, supra glabris nitentibus, bracteis involucralibus inaequalibus, et indumento tenuissimo differt.

Type: New South Wales, Kosciuszko National Park, Tumut Ponds Fire Trail, G. Wright 102, 10.xii.1998 (holotype MEL 2054189; isotypes CANB, NSW).

Shrub to c. 1.2 m high, usually multistemmed from base and more or less leafless in the lower half. Younger stems, undersurfaces of leaves and peduncles densely floccose with white to pale fawn stellate hairs. *Leaves* alternate, sessile, oblong to linear, 40–80 mm long, 1–5 mm wide, apex acute, base cuneate, margins entire, recurved to revolute, adaxial surface glabrous at maturity, but with small, scattered tubercles, lustrous, with impressed reticulate venation, very young leaves with sparse stellate hairs. *Capitula* in corymbs terminating main branches and short lateral branchlets. *Peduncles* mostly 1–3 cm long. *Involucre* broadly obconic. *Bracts* 3–4-seriate, the outermost ovate, c. 1 mm long, the innermost oblong to narrow-ovate, 3.5–4.2 mm long; stereome green, margin chartaceous, mostly entire, fimbriolate at or near apex; abaxial surface with sparse multicellular gland-tipped hairs and/or sessile glands, usually with a few eglandular stellate hairs. *Ray florets* 9–14, uniseriate, white (rarely pale mauve or lilac), glabrous or with few minute glandular hairs shortly below the ligule. *Ligule* 4–6 mm long, obtuse, entire or minutely 3-lobed apically. *Style arms* filiform, c. 1.5 mm long. *Disc florets* similar in number to ray florets, corolla c. 4 mm long, yellow, sparsely glandular-pubescent on the tube and apices of lobes. *Anthers* linear, c. 1.5 mm long (including the acute apical appendage), shortly exerted from corolla. *Style arms* narrowly obovate, c. 1.2 mm long. *Cypselas* flattened-cylindric to narrow-obovoid, c. 2 mm long, shortly sericeous, obscurely 6-ribbed. *Pappus* biseriate, the outer series of c. 10–20 barbellate bristles or narrow, flattened scales 0.5–1 mm long, the inner series of c. 30–40 barbellate bristles 3–4 mm long. (Fig. 1)



Fig. 1. *Olearia stenophylla*; a flowering branch $\times 1$; b transverse section of leaf $\times 15$; c capitulum $\times 3$; d cypsel (upper part of pappus not illustrated) $\times 30$ (all from Wright 102, MEL).

Specimens Examined: NEW SOUTH WALES (all Kosciuszko National Park): Happy Jacks River Gorge, 28.xi.1954, *M. Mueller s.n.* (MEL); Tumut Pond, Clear Creek Valley, 16.xii.1954, *M. Mueller s.n.* (MEL); Happy Jacks Gauging Station, 5.i.1960, *M.E. Phillips s.n.* & *J.E. Raeder-Roitzsh* (CANB); Cabramurra-Khancoban Rd, 2 km south of dam wall at Tumut #1 Reservoir, 10.xii.1998, *N.G. Walsh 4892* (MEL, CANB); Tumut Ponds Fire Trail, 10.xii.1998, *G. Wright 103* (CANB, MEL).

Distribution and Conservation Status: Apparently confined to an area of c. 9 km × 5 km in the catchment of the Tumut River (including Clear Ck, Happy Jacks Ck) above its impoundment by the Tumut Pond Dam, in the Kosciuszko National Park, New South Wales (Southern Tablelands). It is locally common within this area, but using the criteria of Briggs and Leigh (1996) its conservation status would be assessed as 'rare'. Further searches within the general area, particularly in the lower catchments of Nine Mile Ck and Temperance Ck are likely to increase the number of known populations (but perhaps not the overall range) of the species.

Habitat: All known populations occur within *Eucalyptus pauciflora* woodland (occasionally with other eucalypts such as *E. stellulata*, *E. perriniana*) between 1200 and 1400 m altitude. The substrate is typically shallow soil derived from shaly sedimentary substrate. Typically associated shrub species include *Olearia phlogopappa*, *Podolobium alpestre*, *Ozothamnus secundiflorus*, *Grevillea victoriae s.l.*

Phenology: Flowering specimens have been collected from late November to mid December.

Notes: According to herbarium collections at MEL and CANB, only three specimens of *O. stenophylla* had been collected prior to 1998, two of these in 1954, one in 1960. Since 1954, areas adjacent to the collecting localities had been flooded as part of the Snowy Mountains Hydroelectric Scheme, and there were concerns that the species may have been extinguished or severely depleted before being taxonomically recognised. Fieldwork in late 1998 confirmed the continued existence at the known sites, and extended its range slightly. The few specimens of *O. stenophylla* collected prior to 1998 had been referred to *O. asterotricha* (F. Muell.) F. Muell. ex Benth. from which it differs in the generally longer, linear leaves that are glabrous and shining on the adaxial surface, the shorter involucre with bracts that increase in size from the outermost to the innermost series (those of *O. asterotricha* being 4–7 mm long and of almost uniform length), and the finer indumentum (the stellate hairs of *O. stenophylla* being typically c. 0.2 mm diam. and those *O. asterotricha* being typically 0.5 mm diam. or more). The leaves of *O. stenophylla* superficially resemble those of *O. rosmarinifolia* which occurs in the general vicinity, but that species has predominantly opposite leaves with raised reticulate venation on the adaxial surface and a dense indumentum of appressed medifixed hairs on the lower surface, and glabrous or subglabrous achenes with a uniseriate pappus. *O. phlogopappa* is common throughout the general area in which *O. stenophylla* occurs, and is clearly related to it, but is readily distinguished by its broader leaves that are dull (and sometimes scurfy-pubescent) on the adaxial surface, with flat, typically lobed or toothed margins, finer indumentum and uniseriate pappus.

The species is not recorded by Lander (1992).

Etymology: The epithet is derived from the Greek (*stenos* = narrow, *phyllon* = leaf) and refers to the characteristic linear to oblong leaves.

***Euchiton poliochlorus* N.G. Walsh, sp. nov.**

E. fordiano M. Gray et *E. argentifolio* N.A. Wakef. affinis, a primo foliis angustioribus, capitulis paucioribus, a secundo capitulis largioribus, et ab ambobus foliis griseo-viridis (non albidis) differt.

Type: Victoria, Baw Baw Plateau, headwaters of West Tanjil River, 18.i.1982, *N.G. Walsh 658* (holotype: MEL 605140; isotypes (2) CANB).

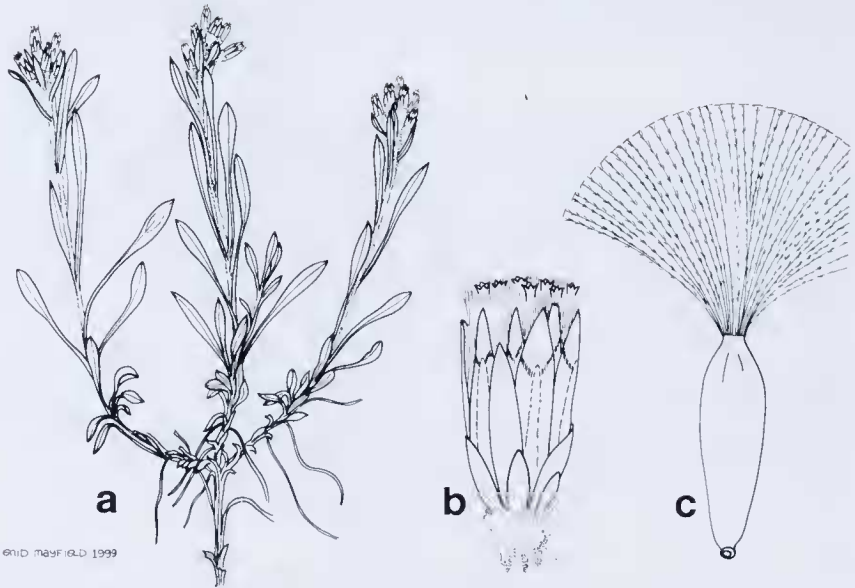


Fig. 2. *Euchiton poliochlorus*; **a** habit $\times 1.2$ (Adair 996, MEL); **b** capitulum $\times 6$ (Walsh 658, MEL); **c** cypsel (upper part of pappus not illustrated) $\times 30$ (Walsh 3055, MEL).

Rhizomatous perennial *herb*, sometimes loosely mat-forming. *Leaves* mostly crowded near base of plant. Lower leaves narrow-oblongate or -spatulate, commonly with petiole-like base subequal to broader 'blade', 1.5–3.5(–5) cm long overall, 1.5–4(–6) mm wide, terminating in a minute, thickened glabrous point, surfaces equally grey-green with moderately dense, appressed cottony hairs, slightly 'looser' abaxially; midrib not or scarcely raised on adaxial surface, but prominent abaxially, lateral venation not apparent. Flowering stems unbranched, erect, 4–12 cm high (to 20 cm in fruit), densely white-cottony, with 6–12 leaves, reducing toward inflorescence. *Inflorescence* of 3–5(–7) capitula, racemously arranged, initially compact and head-like, the main axis and peduncles elongating in fruit to c. 25 mm and 12 mm respectively, each capitulum subtended by a reduced leaf-like bract. *Capitula* cylindrical; involucre bracts translucent, brownish-green near base, usually with a reddish band near the middle, stramineous toward the apex. *Outermost bracts* ovate, 2–3 mm long, sparsely cottony near base; *inner bracts* more or less oblong, 5–6.5 mm long, glabrous, obtuse or ruminant at apex. *Bisexual florets* 3–7. *Female florets* c. 20–35. *Corollas* 4–4.5 mm long. *Cypselas* narrowly obovate, 1.4–1.6 mm long, 0.4–0.6 mm wide, flattened, smooth and glabrous. *Pappus* of c. 30–50 slender barbellate bristles 4–5 mm long, united at base for c. 0.1 mm, readily detaching from cypsel. (Fig. 2)

Representative specimens: NEW SOUTH WALES (all Kosciuszko National Park): Snowy River, below Spencers Creek, alt. 1630 m, 26.i.1973, *J. Thompson* 1749, 1751 (NSW); Guthega River, alt. 1585 m (5200 ft), 30.i.1974, *J. Thompson* 2004 (NSW); Above Charlottes Pass toward Mt Kosciuszko summit, 23.ii.1978, *M. Gray* 6854 (CANB); Southern end of Perisher Range, 10.ii.1966, *M. Gray* 5910A (CANB); Between Soil Conservation Hut and the Chalet, 23.ii.1970, *E. Dahl* s.n. (CANB); McKeahnies Ck catchment, Happy Jacks Plain, 28.i.1965, *M.E. Phillips* s.n. (CANB). VICTORIA: Bogong High Plains, Watchbed Ck, 26.i.1966, *A.C. Beauglehole* 15617

(MEL); Snowy Range, Bryce Plain, 31.xii.1972, A.C. Beauglehole 40852 & E.A. Chesterfield (MEL); c. 0.8 km (0.5 miles) NW of Mt Nunniong, 22.i.1971, A.C. Beauglehole 36445 & E.W. Finck; Mt Buffalo Plateau, between The Horn & Wilfreds Hill, 18.ii.1963, J.H. Willis s.n. (MEL). Tasmania: Cradle Mountain Reserve at 3,500 ft (1100 m), W.M. Curtis s.n. (HO).

Distribution and Conservation Status: Moderately common in subalpine and alpine areas of the Southern Tablelands of NSW, from Kiandra area south to the summit area of Mt Kosciuszko. In Victoria scattered through the Snowfields region (Conn, 1992) where suitable habitat occurs (e.g. Nunniong Plateau, Mt Buffalo, Bogong High Plains, Snowy Range, Baw Baw Plateau). Recorded only from Cradle Mountain area in Tasmania. Not considered rare, and well represented in conservation reserves. Apparently not present in New Zealand, which shares with Australia other closely related species of *Euchiton* (Drury 1972, Curtis 1963).

Habitat: Usually occurring in *Sphagnum* mossbeds, wet heathland or wetish grassland communities at altitudes between c. 1400 and 1850 m on the mainland, but at c. 1100 m in Tasmania.

Phenology: Flowering specimens have been collected from December to February.

Notes: This species most closely resembles *E. fordianus* and *E. argentifolius* (see footnote below) which, like *E. poliochlorus* are both alpine or subalpine species having more than one capitulum per inflorescence. *E. poliochlorus* can be distinguished from *E. fordianus* by the fewer, narrower capitula, and from *E. argentifolius* by the larger capitula, and from both by the grey-green rather than silvery-white leaves. Both *E. fordianus* and *E. argentifolius* tend to be species of drier grassland or open heathland communities than does *E. poliochlorus*.

Although *Euchiton* is generally regarded as being characterised *inter alia* as having paired papillae and often clavate hairs on the epidermal cells of the cypselae (e.g. Drury 1970, Anderberg 1991, Bremer 1994), even at $\times 80$ magnification the cypselae epidermis of *E. poliochlorus* is reasonably described as smooth and glabrous. Electron microscopy reveals that the epidermal cells each have a minute distal papilla but appear to lack proximal papillae (A. Rozefelds pers. comm.). True hairs are lacking. The correlation between cypselae morphology and segregate genera formerly included in *Gnaphalium* is currently being investigated by A. Rozefelds (Tasmanian Herbarium, Hobart).

Etymology: The epithet is derived from Greek (*polios* = grey, *chloros* = green) and refers to the colour of the leaves. It is chosen to be contrasted with the silvery or silvery-white leaves of closely related, largely sympatric species.

The following key is provided to allow the mainland Australian, subalpine to alpine, grey- or silver-leaved terrestrial species of *Euchiton* to be distinguished.

- 1. Inflorescence of several capitula.....2
- 1. Inflorescence of a single capitulum4
- 2. Inner involucrel bracts 3.8–5 mm long; leaves silvery-white.....*E. argentifolius*
- 2. Involucrel bracts usually 5 mm long or more (if ever only 5 mm, then leaves grey-green)3
- 3. Leaves silvery-white, 5 mm wide or more; inflorescence of 5–15 capitula
.....*E. fordianus*
- 3. Leaves grey-green, rarely wider than 4 mm; inflorescence of 3–5(–7) capitula.....
.....*E. poliochlorus*
- 4. Leaves more or less oblong, less than 1 cm long; capitula sessile in flower (sometimes shortly pedunculate in fruit); inner involucrel bracts 7–9 mm long.....
.....*E. nitidulus*
- 4. Leaves oblanceolate to spatulate, the longest more than 1 cm long; capitula normally pedunculate in flower; inner involucrel bracts under 7 mm long.....5

5. Leaves to 15 mm long, crowded at base but not rosetted; flowering stems with about 5–10 leaves not or barely smaller than basal leaves; inner involucre bracts 3.8–5 mm long; cypselas usually glabrous; plants usually mat-forming.....*E. argentifolius*
5. Leaves 15–30(–50) mm long, rosetted; flowering stems with c. 1–5 much-reduced leaves; inner involucre bracts 5–6.5 mm long; cypselas shortly and sparsely hairy; plants rarely mat-forming*E. traversii*

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Footnote

Subsequent to the preparation of this paper it has been brought to my notice that due to Wakefield's inadvertent incorrect assignment of the type specimen for *G. argentifolium*, the name *Euclitton argentifolius* as used in the present paper probably refers to two entities, and that in the strict sense *E. argentifolius* may be confined to Tasmania. In the diagnosis for and notes following the description of *E. poliochlorus*, and in the key to related species, the name *E. argentifolius* is used for that taxon currently regarded as such in mainland Australia, although the comparisons made are probably equally relevant to Tasmanian material referred to that name.